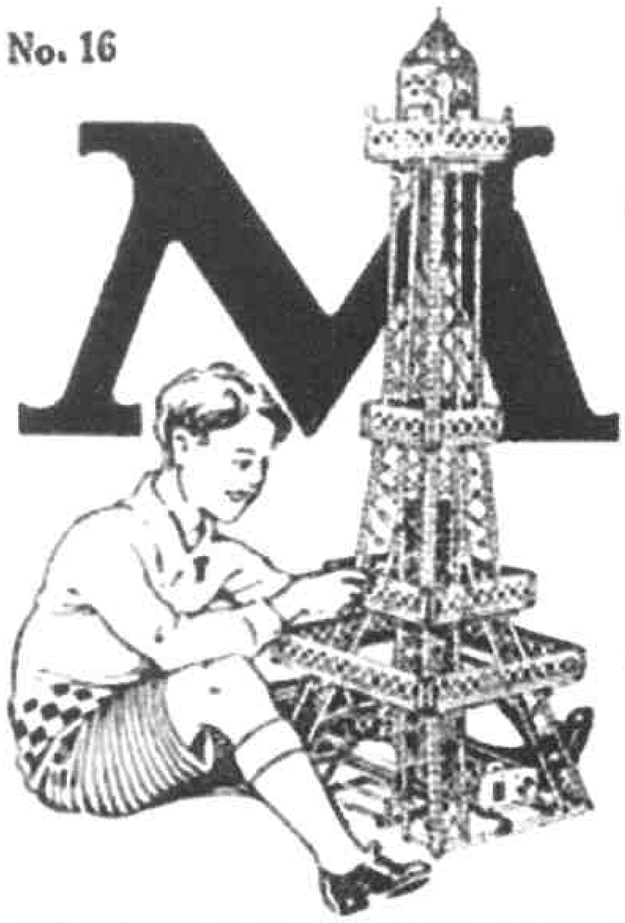
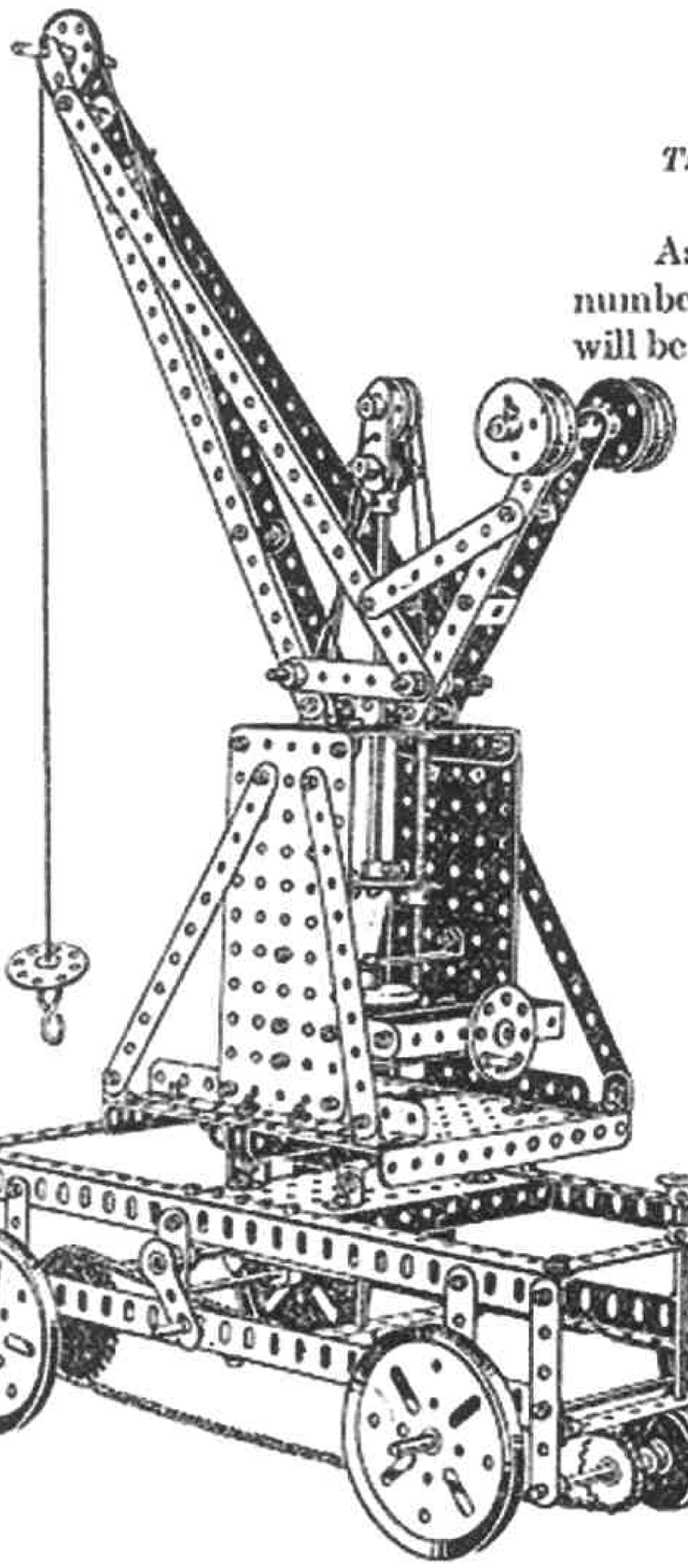
No. 16 JANUARY-FEBRUARY 1921.



MECCANO MAGAZINE

PRICE 1d

TO HELP MECCANO BOYS TO HAVE MORE FUN THAN OTHER BOYS



Hydraulic Crane

This splendid model was awarded a valuable prize in our 1919-20 £200 Prize Competition.

As announced in our last issue, it is our intention to illustrate in each number of the *Meccano Magazine* an entirely new Meccano model. Many of them will be models that have won prizes in our recent Competitions. In due course they will appear in new editions of the *Meccano Manuals*, and will be fully illustrated and described.

This model is designed to illustrate the operation of a Hydraulic Crane, in which great power is utilised to force two or more sets of pulley wheels apart, chains passing round the pulley wheels so that by a small movement of the operating power a great movement of the load is effected. In the model, instead of water power, screws are used to move the chain or cord pulleys.

In this crane the weight is raised or lowered by operating the hand-wheel facing the rear of the Crane truck. The spindle of this handwheel is geared to the crown wheel which may be seen in the illustration: a gear wheel on the crown wheel axle engaging pinions on two vertical threaded rods, one only of which is shown in the illustration. Two threaded cranks engage the threaded rods and move up or down as the rods are rotated. A length of rod is connected to the threaded cranks and carries small pulleys as shown at the top round which the operating cord passes, being led also round other small pulleys at the base of the jib, the free end of the cord passing over the pulley at the top of the jib. The jib is swivelled by the crank handle at the side of the truck, and the whole Crane is caused to move on the four travelling wheels by the crank handle at the near end.

EDITORIAL.

Good Wishes.

Let me offer my warmest thanks to the hundreds of my readers who have sent me Christmas greetings and good wishes. My office is decorated with photographs and cards from Meccano boys and I feel myself surrounded by kind thoughts. I send to all my readers my sincere wishes for the year which we have now entered.

Hornby Trains.

I know that these wonderful trains would be well received, but I was hardly prepared for the avalanche of orders which descended upon us from every toy dealer in the country. My congratulations go to those boys who were fortunate enough to secure one in time for Christmas, and to the disappointed ones, I would say, that their patience will be rewarded in a very short time as our factory output increases.

More New Meccano Lines.

The Hornby train is only the first of a series of good things. In a little while we shall be able to announce new types of engines, carriages, trucks, signals, etc., each one of which may be relied upon to be better than anything hitherto introduced. I shall be able to give more information regarding these new lines in future issues.

Photographs Wanted.

I receive many photographs from my readers of themselves, their models, local engineering structures, and others of interest, and I propose publishing a number of these in the *Meccano Magazine*. I shall be glad to receive interesting photographs from any of my readers who possess a camera, and to pay 2s. 6d. for each one used.

Meccano in Schools.

Almost every day boys and teachers write to tell me that as a result of Essay and Model-building Competitions held in their schools, they have discovered that more than half the pupils possess Meccano outfits. I am anxious to find out what percentage of schoolboys

throughout the country use Meccano, and shall be glad to hear from any of my readers who can give me information regarding their own classes or schools.

A Warning.

In our No. 14 issue I warned my readers against begging letters received from abroad. The principal culprits appear to be boys on the West Coast of Africa who write to Meccano boys asking them to send fountain pens, writing paper, handkerchiefs, etc. I hope all my readers will ignore all communications of this type. If doubtful correspondence is received by any Meccano boy, he should at once write to me.

Insufficient Postage.

A number of letters have recently reached me insufficiently stamped, and as the rejection of these by our Receiving Department causes disappointment to the senders, I am asking all my correspondents to see that sufficient stamps are attached to their envelopes. If two or more friends are writing to me at the same time, all their letters can be enclosed in the same envelope.

Our £250 Competition.

The entries in our big Competition are coming along in good shape, and the new conditions which govern this contest are proving very acceptable to Meccano boys. Let me warn intending Competitors that the closing date is April 15th. This Contest promises to be a record one.

The Editor

The New Meccano Catalogue.

This beautiful new catalogue should be in the hands of every Meccano boy.

Besides illustrating and describing each outfit and explaining the simplicity and beauty of the Meccano system, it gives full particulars of the new Electrical Accessory Outfits, Meccano Clockwork and Electric Motors, the Hornby Clockwork Train System which is making such a deep impression throughout the country; the Tin Printed Clockwork Trains and Vertical Steam Engines. It also contains two full pages of illustrations of Prize-winning Models in the Big Meccano Competitions, and a fully illustrated list of the entire range of Meccano parts, including the new and valuable ones which have been recently added.

The demand for "Meccano Products" following the announcement in our last issue has been very heavy indeed, but there are still thousands of Magazine readers who have not taken advantage of this splendid offer.

We wish every reader of the *Meccano Magazine* to possess one of these beautiful booklets. A copy will be sent FREE on receipt of your postcard. Write to-day.

Suggestions by Meccano Boys.

There could be no better evidence of the keenness of our readers for the Meccano hobby and their powers of observation and invention than the stream of suggestions which continues to come in from Meccano boys for new accessory parts, new movements, etc., and it seems to us that it would be of considerable interest to all our readers if as many of these suggestions as possible were dealt with in these columns.

We therefore propose devoting a portion of our space in each issue to these suggestions.

Very many of the suggestions made are for parts which have only one function, and whilst in some cases it is necessary to introduce one function parts such as shuttles, healds, weights, Meccanograph tables, etc., it must not be forgotten that the underlying principle of the Meccano system is the variety of uses to which each part may be applied. The most valuable parts of the Meccano system are those which serve the greatest variety of purposes, and we naturally value the suggestions most which are on these lines.

In almost every issue of the *Meccano Magazine* new accessory parts are announced which greatly strengthen the Meccano system, and we are always on the look-out for new ideas. Any suggestions sent in by Meccano users are very welcome, and most carefully considered, and we see that any special merit or inventiveness shewn is recognised and properly rewarded.

Below we deal with a few suggestions which have recently been received:—

W.E.T., Southampton, sends us a suggestion for the introduction of a single bucket or chain of buckets to the Meccano system. We already have this in hand and hope to introduce one very shortly.

Sydney B., Tottenham, writes to say that an eccentric piece would be extremely useful to all Meccano boys. There are several ways of making an eccentric with existing parts; for example, the crank secured to the rod with a bolt lock nutted to the shank to carry a perforated strip; or a bush wheel or face plate may be used in a similar manner. If S.B. will kindly let us know for what purpose he requires the crank we may be able to help him over his difficulty.

Douglas B., London, S.E., suggests more illustrations in the Manual so that the construction of some of the models may be more easily understood. We have had two difficulties to contend with in the past, either to reduce the number of models in the Manuals and provide more detailed instructions, or increase the size of the Manual. Owing to the great cost of paper, however, we have been compelled to keep the Manual as it is, but later on we shall select the more difficult models and elaborate the instructions.

B.I.M., Walworth. A crane drum may be made with existing Meccano parts by the use of a wood roller with a bush wheel butted up against it at each end, secured to the rod with the set screws.

Stanley, D., Birmingham. Points will be ready shortly to be used in connection with the lines for Hornby trains. The keys for winding the trains are now being made with a guage at one end to test the accuracy of the lines.

M.S., Templecombs. We announce in this issue a new type of pawl which is arranged to engage in either a half inch or three-quarter pinion wheel. This is capable of controlling a crane handle. Two of these fastened to the same rod in opposite directions may also serve as a pallet for regulating a clock.

Meccano and Electricity.

Different Kinds of Electricity.

There are two kinds of Electricity, a fact which any boy will understand by carrying out one or two simple experiments. If a glass rod is rubbed with a piece of dry silk it becomes charged with electricity, and when placed in contact with some small pieces of tissue paper or other light substance it will be found, first of all, to attract the particles and then after a short time to repel them.

An amber rod or a rod of sealing wax rubbed with dry flannel or fur acts in just the same way; but if, after rubbing, the amber rod is placed close to the particles which were repelled by the glass rod, it will be found that they adhere to it and are not repelled.

Rubbing the rod charges it with electricity which is passed on to the tiny particles; immediately these become charged they no longer adhere to the rod, and it is obvious from this that two bodies charged with the same kind of electricity repel each other.

We noticed, however, that the amber rod attracted and held the particles cast off by the glass rod, and we come to the conclusion that the Electricity in these particles must be different from the electricity in the rod.

As a matter of fact, the glass rod when rubbed, becomes charged with what is known as "positive" electricity, whilst the amber rod becomes charged with "negative" electricity.

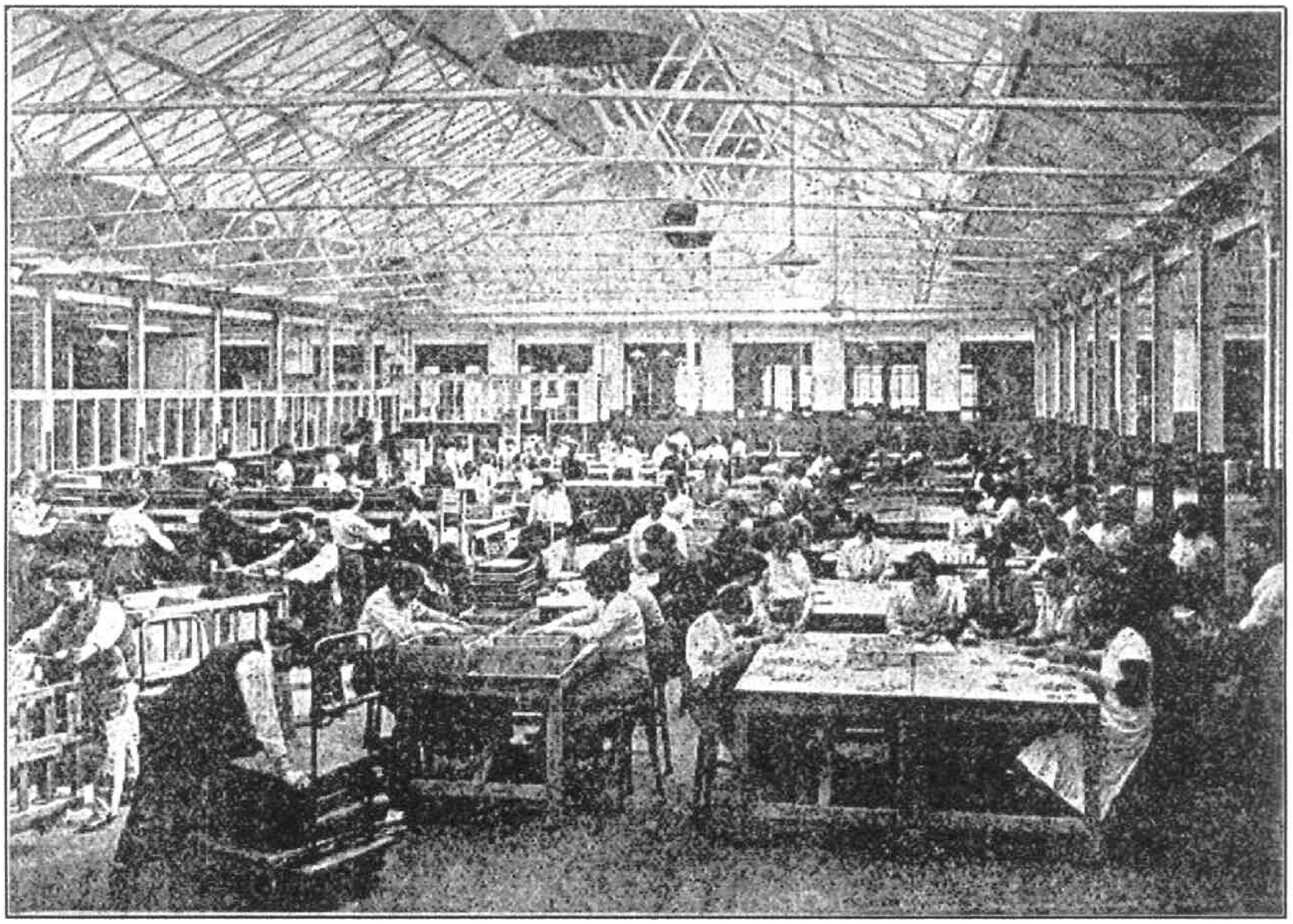
It will be well to remember this, and also that two "positives" and two "negatives" repel each other, whilst a "positive" and a "negative" attract each other. Electricity thus acts very much like that mysterious force, magnetism, and we shall deal more fully with this later.

The electricity generated by rubbing is known as "Frictional Electricity" and comes under the heading of "Electrostatics." It is of very little practical use, as no power worth mentioning can be derived from it.

The Electricity with which most of us are now familiar is that which lights our lamps, drives trams and trains, operates machinery, telephones, telegraphs, etc., and is fast becoming the most important source of "power" in the world. It has very much the same properties as frictional electricity, except that ever so much more power can be generated from it.

How to get the Meccano Magazine regularly.

The Meccano Magazine is now sold by most of the regular Meccano dealers, but in order to prevent disappointment you should place an order with your dealer for a copy of each issue to be reserved for you. The price of each issue is 1d. If you experience difficulty we will mail you a copy regularly on receipt of 6d. for the next six issues, or 1/- for the next twelve.



A Section of the Meccano Packing Department.

Life Story of Meccano

By Frank Hornby.

(Continued.)

A department of very great interest in our factory is our Packing Department, and I am able in this issue to include a photograph of a portion of this Department. The floor space of the room is 24,000 square feet, and it is one of the finest in our entire factory. It is to this room that the finished Meccano parts are finally transferred to be made up into bundles of the required quantities, ready to go into outfits. Perforated strips, Angle Brackets, Rods, Girders, etc. are brought to the tables, where girls wrap them up in twos, threes, sixes, tens, etc. for the various sized outfits. At other tables nuts and bolts are counted into boxes, while at others girls are busily at work placing the various wheels, pinions, etc. on cards. This work goes on all the year round, and these particular tables are busiest in the summer months preparing the stock for shipment throughout the country, and throughout the world, during the autumn and winter months.

In our factory, throughout the year we use 1,500 tons of metal, and as the whole of the finished parts come finally into our Packing Department to be placed in the outfits, you will see that these girls handle about 5 tons of Meccano parts a day throughout the working year. One side of this large room is devoted entirely to the packing of finished outfits, separate tables being devoted to regular and accessory outfits. In the centre of each table are the parts to be used, ready bundled and carded, and there are about ten girls at each table. The empty cartons are placed at one end of the table and are passed along to the girls, who rapidly fill them and transfer them to the other end of the table, where the Manual of Instructions is placed in each one, along with other literature.

You will have noticed that in each of our outfits a little slip is placed bearing several numbers. These numbers indicate to us the date each outfit was packed and the head worker who had charge of the table at which it was made up. In the event of a shortage or defect being discovered after the outfit has left our hands, we are always able to trace it right back by means of this slip and thus remedy any defects.

The next and final operation is the wrapping of the outfit in our well-known kraft wrapping paper, and placing the label at the end. This work is rapidly done by expert girls at other tables.

A very interesting feature of this room is the Labelling Machine; this is a great labour and time-saving device, which we have had in use for many years. The labels are placed on a table in a pile, and are fed one by one into the machine, which gums the entire back of the label, and conveys it along on a horizontal running linen band, about 18 feet long, which passes between a number of tables where girls are waiting for them. These girls take the labels from the running band, and rapidly and accurately place them on the lids of the cartons. The machine is operated by electricity, and it makes the work of labelling both expeditious and clean.

There is a great amount of organisation necessary in the running of a room of this kind, in which not only Meccano outfits for British boys are packed, but also for boys in our Colonies, in France, Spain, Portugal, Denmark, Sweden, Italy, Holland, China, etc., each requiring special labels, Manuals of Instructions, and other literature. You can easily imagine the large number of Manuals in various languages we need to have on hand at all times, and the number of cartons of various sizes. With proper organisation, however, the whole of this work goes on with marvellous smoothness, and complaints of faulty packing, shortages, etc. are very rare indeed.

(To be continued.)

The Meccano Guild

A Fellowship of Meccano Boys

Member's Badge

Leader's Badge

The objects of the Meccano Guild are:

(a) To make every boy's life brighter and happier.

(b) To foster clean mindedness; truthfulness, ambition, and initiative in boys.

(c) To encourage boys in the pursuit of their studies and hobbies, and especially in the development of their knowledge of mechanical and engineering principles.

The Meccano Guild of Boys is now firmly established, and is becoming stronger each day. We wish every boy who buys or has given to him a Meccano Outfit to understand that besides having secured the finest and most pleasurable toy in the world, he has also secured the privilege of associating himself with more than a million other boys who are working and playing just in the same way as himself, and endeavouring to get as much joy out of life as possible.

Each new Meccano boy should immediately join the Guild as an individual member, and, as soon as possible, attach himself to an existing Meccano Club, or combine with other Meccano boys to form a Club in his own district. You have only to read the reports of the activities of the Meccano Clubs in this issue to appreciate what this movement can mean to you. There are many thousands of boys in this country who meet together regularly once a week to have good times.

To join as an individual member it is only necessary for you to fill in a Guild application form, and post it to the Guild Secretary, along with 7d. in stamps, for your official badge, which every Meccano boy is proud to wear. Along with this badge you will be furnished with a certificate of membership, on which are set out the things for which the Guild stands. If you intend to form a Meccano Club, the Guild Secretary will provide you with all the help and information you need, and we can promise that when once you get your Club established, you will have the jolliest times you have ever had.

We cannot publish in this issue all the rules and regulations of the Meccano Guild, and the benefits which it confers on its members, but the Secretary of the Guild will be glad to send you all this information if you will apply to him.

Guild Notes.

By the Secretary.

If new Meccano Boys could read the correspondence which comes to me every day from Guild Members, Club Secretaries, and Club Leaders, and see with what enthusiasm and enjoyment every member is working, not one of them would wish to remain outside the Guild for a single moment.

The Meccano Guild is now firmly established, and the list of affiliated Clubs is growing rapidly and strongly. I am happy to say that letters now reach me from prospective Club Leaders of the right kind—men who take a deep interest in the welfare of boys, and who realise the excellent work that can be done through the Guild. Prominent men throughout the kingdom also recognise the wonderful work that we are doing, and are identifying themselves closely with the work of the various Clubs. I have learned from long experience that when intelligent boys work together for common enjoyment and good, there are always forthcoming the right kind of men to encourage and help them in every way possible.

I am especially glad to note from the various Club reports, that both Club Leaders and members are showing considerable initiative in introducing new subjects and new activities into the Club syllabus. Any Club official who is in doubt as to his own syllabus has only to read the reports of other Clubs to provide himself with any number of interesting subjects. I am always happy to help in this work and to assist in the preparation of plans for the session's syllabus.

Let me remind you again of the Guild Recruiting Campaign, which has been enthusiastically taken up by large numbers of Guild members. I am again illustrating the handsome medallion which is offered to members who secure three new recruits for the Guild. As a special award, the boy who obtains the largest number of recruits between September 1st, 1920, and March 1st, 1921, will receive an exact duplicate of the medallion in solid gold, with his name engraved on it, and to the boy who recruits the next largest number, a silver medallion, similarly engraved will be awarded. A large number of medallions have already been awarded, and much delay and trouble will be saved if every member sees that his own name and address appears on the back of the forms used by his recruits.

I shall be very pleased to send full particulars of the Campaign to any new members wishing to take part in it.

The Guild Correspondence Club is now in full operation, and its benefits are being enjoyed by a large number of boys. Lack of space prevents me from publishing the rules in this issue of the Magazine, but any member who would like to get into correspondence with another Meccano boy in this or any other country will be supplied with rules and full particulars on application.

Many Clubs are actively entering the Competition for which special Club prizes are offered. The Club which designs the best model during the Winter session will receive a cash prize of £5, and the Club which designs the next best model will receive £3. Each model must be the joint work of the Club members, and must be started and finished at the Club meetings. I have started this Competition in order to help the financial position of those Clubs who do the best work, and from passages in the various reports of those taking part, I anticipate some excellent entries.

I am very pleased to acknowledge the many letters of thanks and good wishes which have reached me from Club Leaders and members, and in doing so, I want to offer my very sincere thanks for the splendid way in which they have co-operated with me to establish the Guild on such successful lines.

Club Notes.

ASCENSIUS MECCANO CLUB.—A very successful session. Club is fortunate in having hall, games and lighting, etc., free, but nevertheless owes much to the organising ability of the Club Leader. Mr. Young advocates variety—Competitions, Exhibitions, Lantern Lectures, games, visits to engineering shops, etc. L. Bicknell gained 1st Prize in Club Competition with "Puffing Billy."

THE CIRENCESTER GRAMMAR SCHOOL MECCANO CLUB.—First session short but very successful. Average attendance, 15, and finance sound. Model Building, Lectures by Master Legg and the Secretary, and an impromptu concert in which everybody did his best to amuse everybody else, are chief items of note.

CLAYGATE MECCANO CLUB.—Has made rapid strides, largely due to Mr. Haynes arousing the active interest of local gentlemen—Mr. Britnell, Mr. Hudson, Mr. Nightingale, Mr. Randall and Mr. Tipler. Boys now have expert advice and assistance in Engineering subjects and Carpentry, and in addition to usual Club pursuits they are building their own benches, etc. During Christmas week, Club earned over £6 singing Carols—this was handed to Local Hospital.

On New Year's Day members of Committee and their wives gave boys a splendid tea, many gifts being received from parents and friends. 15 boys were present and whilst at tea they were visited by their President, Sir Francis Barker and his wife, Lady Barker. After inspecting the models, Sir Francis spoke to the boys and told them how pleased he was with the work he had seen.

The boys sang a Carol for Lady Barker, and after staying over an hour the distinguished visitors were given three hearty cheers on leaving.

After tea, friends and relations came in and a very enjoyable evening was spent with Singing, Recitations, Dialogues, Piano and Violin Solos, etc.

HOLY TRINITY MECCANO CLUB.—The high standard of excellence reached by the Club, well maintained during the last session. Members have entered for the Club Model Competition with great zest, and interesting Lantern Lectures were given by the Leader, Mr. S. H. Wilson, on "A Romance of the Cotton Industry" and "Ants and their Ways." Club subscription has been increased, and the *Meccano Magazine* and Club Magazine are supplied free in consequence. "Question Night" and "Improvement Night" two new features in the Syllabus. On the former, questions are put to Leader and Secretary, then fully discussed; on the latter, certain models are built one evening, and at the following Club meeting new parts substituted where suitable. More books have been added to Club Library: Savings Bank has been busier than ever, and Mr. Wilson has a good balance in hand for next session.

JUNIOR ENGINEERS MECCANO CLUB.—Making good headway. Mr. Yeats believes strongly in Competitions and visits to engineering works.

KENYON HALL COLLEGE MECCANO CLUB.—By kind permission of the Headmaster, Dr. J. Mastin, D.Sc., etc., a Club has been established for the boys under his personal leadership. Dr. Mastin finds that Meccano interests boys in mechanics better than anything else, and this, together with the enthusiasm of the members, augurs well for the future of the Club.

KNOCKHOLT MECCANO CLUB.—Newly affiliated; has had very successful first session. Boys look forward to, and enjoy the Club night, when they build models, read up engineering subjects, discuss the mechanism of models, and enjoy short lectures given by members and the Club Leader.

LEAMINGTON MECCANO CLUB.—Club more vigorous than ever; members by regular attendance and enthusiasm at meetings back up the excellent work of Mr. F. W. Bull, and his capable and energetic Secretary, Master G. Hare. Membership increasing so rapidly, that Mr. Bull has invited co-operation of Juvenile Organisation Committee. Lt.-General Sir John Kier kindly consented to become the President of the Club, and writes:—

Dear Mr. Bull,

Thank you for your letter and for the honour you have conferred on me in so kindly inviting me to accept the Presidency of your Meccano Club.

I accept with great pleasure and am glad to hear that the Club is joining the I.O.C. Union. I should like to be present at one of your meetings, so as to see the boys at work. A Club like this cannot but be for good, and we are indeed fortunate and lucky to have it in such capable hands.

Yours truly,

J. L. KIER.

Mr. Bull also hopes to welcome the Mayor of Leamington and Members of the Town and County Education Committees at a Club meeting.

Success of the Club is very largely due to the variety of interests introduced by the Club Leader—Lectures, Model Building, Discussions, Games, Competitions (with prizes), Exhibitions, Entertainments (to which members bring friends), visits to works, etc.

PORTSMOUTH GRAMMAR SCHOOL MECCANO CLUB.—Mr. Burnham having removed to London, the Club is temporarily without a Leader—we hope a gentleman will soon be found to fill Mr. Burnham's place.

PRINCE'S PARK (Liverpool).—A promising start has been made largely due to the initiative of Master B. Szawley.

RIPON MECCANO CLUB.—Mr. Pinchbeck reports excellent progress. Members get keener with each meeting. They are having a Cinema Show early in the New Year.

ST. THOMAS' (Exeter).—Master Falk's excellently arranged report reflects great credit on him as Secretary. Mr. Willmin resigned early in the session, succeeded by Mr. Pelly, and Club report shows considerable increase in membership, whilst there is a balance in hand to carry over to next session. Enjoyable meetings have been held, the buzzing of as many as five motors at a time adding to the note of busy activity; discussions, Lectures (one on "Pyramids," by Master J. Hoskins being particularly interesting), and a final social evening on December 18th, at which every member present thoroughly enjoyed himself. All kinds of games indulged in, and Mr. Pelly kindly extended the time. The new session commences January 8th.

SECONDARY SCHOOL MECCANO CLUB (West Hartlepool).—Mr. A. T. Prentice kindly consented to become Club Leader in response to requests of boys attending Municipal Technical College. Membership should soon reach 50. Mr. Prentice finds it an excellent plan to set five boys to work each building a model. On Club night, the models are brought along: each boy in turn explains principles, mechanism and working. Afterwards members discuss and criticize.

SMALL HEATH MECCANO CLUB shows continued and excellent progress, and sound financial position. By exhibiting cards in Meccano Dealers' Windows, membership has been considerably increased. Meccano Stall at Pedlar's Fair handed over 5s. towards Church Expenses. Mr. Edge not only develops the games and instructive side, but also encourages members to live up to the ideals for which the Guild stands. Savings Club has been started to enable boys to purchase additional Outfits and parts.

SOUTHVILLE MECCANO CLUB.—Mr. Stickler reports members have risen to the occasion in making Club a big success. Meetings well attended, lively discussions and instructive lectures. Members enjoy the half hour of each meeting devoted to games. Several boys have applied for membership for next session.

STANLEY ROAD (Worcester) MECCANO CLUB.—At end of a useful session, Concert and Exhibition of models was held. The Prize-winners were:—1st, S. Harris, 2nd, L. Brewer, 3rd, F. Toombs.

STRADBROKE ROAD MECCANO CLUB.—Successful session—Exhibition on Empire Day, visitors surprised and delighted with number and variety of models shown and ingenuity of builders. Social side being cultivated—discussions encouraged, membership increasing and Meccano enthusiasm spreading.

THORNTON HEATH HIGH SCHOOL MECCANO CLUB.—Hope to have new Club room for new session—Club Pierrot Troupe gave an excellent Concert and will repeat the performance on January 15th at a Sunday School Treat. Croydon Public Library kindly loaned slides for Lantern Lectures.

TONBRIDGE MECCANO CLUB.—Although only established on October 6th with 7 members, Club has made wonderful progress, largely owing to the energy and kindness of Mr. T. J. Wickham, the Club Leader. Small Exhibition has been held, but Mr. Wickham hopes to organise one on a big scale, in conjunction with other Meccano Clubs in the district, towards the end of next session.

WATERFOOT MECCANO CLUB.—Mr. Teasdale, the Club Leader, reports model-building evenings very popular: the first and last meeting of each session takes the form of a social. Lectures on Mechanical subjects always interest members, and books recommended in "Suggestions for Club Secretaries" been found very useful. One member's father kindly gave a lecture on "Photography." Competitions and Exhibitions most effective in sustaining interest and difficulty of one boy not being able to build a model, have it discussed, criticized, and then dismantled in one evening, has been overcome by setting two or three boys to work together.

WICKLOW MECCANO CLUB is making very good progress. Boys very keen on Lectures given by Club Leader. Subject is voted for, and lecture given in two or three instalments, each lasting 15 to 20 minutes. Club has its own band which consists of 1 Portable Organ, 1 Violin, 1 Old Tea Tray, 1 Tambourine, and 6 Kazzoos, from which the members get plenty of fun. A successful Concert and Exhibition, held on December 17th, at which a Recitation, "The Meccano Boys," was given by members of the Club.

YARDHEADS MECCANO CLUB.—Recruiting Campaign has improved membership considerably. Average attendance at time of report being 20, as against 8 previously.

The President's Message to Meccano Boys.

I want to wish my Meccano boy friends all over the world a very happy New Year. I hope you will all enjoy pleasurable and jolly times right throughout the year. I thank the hundreds of boys who have written to me at Christmas and the New Year sending me their good wishes, and I only wish I could thank each one personally. 1920 has been another big Meccano year, and never has the enthusiasm for the hobby been so great. Many, many thousands of new Meccano boys have joined up with the Meccano family, which very soon will be the largest family in the world.

The Meccano Guild has made amazing progress, and each issue of the *Meccano Magazine* is received with increasing enthusiasm. The success of the Guild has been very gratifying indeed. Its members throughout the country have been most successful in forming Clubs; they have obtained rooms in the face of great difficulties, and have enlisted the sympathies, support and valuable assistance of capable men, who as Club Leaders and Patrons help them in the work which they have undertaken.

There are many thousands of Meccano Club members who meet regularly each week to enjoy themselves as only Meccano boys can, and to these, and to the men who are acting as their Leaders, I should like to send a special message of good will. I read the reports of the various Meccano Club functions with the greatest interest and care, and I see in them the promise of even better days to come. Many good things are in preparation for Meccano Guild members, and I look forward to the time when this will be the most powerful organisation for boys in the world.

F. Hornby

New Essay Competition.

The subject for this Competition, "How I would run the *Meccano Magazine* if I were Editor," is evidently very popular among our readers to judge by the large number of entries already received. Many excellent attempts have been sent in, several boys even submitting their efforts in verse.

There is no need to wait until the close of the Competition before sending in your Essay. Write it now and send it along, taking careful note of the following conditions.

The subject of the Competition is "How I would run the *Meccano Magazine* if I were Editor."

The Competition is open to all readers of the *Meccano Magazine*.

An Inventor's Outfit "B" will be awarded for the best essay, with other awards for Essays showing special merit.

The closing date is February 10th, and the result will be announced in the March-April issue of the Magazine.

Write on one side of the paper only, not more than 500 words. Give your name and address and age on the back of each sheet, and address the envelope "MECCANO, Ltd., Essay Competition, Binns Road, Liverpool."

Change of Address.

Subscribers should immediately notify the Editor of any change of address. Send a postcard *giving the old and new address*, so that records may be kept up-to-date.

List of Newly Affiliated Meccano Clubs.

KNOCKHOLT BEECHES M.C.
Leader—Mr. H. A. Rost, School House, Knockholt, Nr. Sevenoaks.
Secretary—Master C. Tapsell, School House, Knockholt, Nr. Sevenoaks.

STATIONER'S M.C.
Leader—Mr. L. L. D. Robinson, 8, Landcroft Road, Crouch End, London, N.8.
Secretary—Master R. G. I. Scott, 42, Berkeley Road, Crouch End, London, N.8.

JUNIOR ENGINEERS (LONGSIGHT) M.C.
Leader—Mr. J. Yeats, 75, Birch Lane, Longsight, Manchester.
Secretary—Master Trenlow Booth.
Treasurer—Dr. L. L. Booth.

THE CITY OF NORWICH SCHOOL M.C.
President—Mr. Canham.
Leader—Mr. G. Kingaby, Post Office, Hingham, Attleborough.
Secretary—Master J. Long, 19, Newmarket Road, Norwich.

HILDENBOROUGH M.C.
Leader—Mr. F. Burton, Rougletts, Hildenborough, Kent.
Secretary—Master W. Bassett, Laburnum Cottage, Hildenborough, Kent.

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Secretary—Master R. Srawley, 13, Beaconsfield Street, Liverpool.

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Leaders—Rev. L. Hibbs, D.B., 32, Divinity Road, Oxford; Mr. F. W. Poynter.
Secretary—Mr. Arthur Martin.

TONBRIDGE M.C.
Leader—Mr. T. J. Wickham, 1, Railway Approach, Tonbridge.

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Secretary—Master H. Edmundson, 39, Collingwood Road, West Hartlepool.

NEW MALDEN M.C.
Leader—Mr. V. Hammond, 11, Penrith Road, New Malden.
Secretary—Master S. B. Evans, 22, Howard Road, New Malden.

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Secretary—Master L. Valkering, Ratcliffe College, Leicester.

ST. ANNE'S (LEICESTER) M.C.
Leader—Mr. K. W. Smith, 8, Sunnycroft Road, Leicester.
Secretary—Master R. H. Smith, 8, Sunnycroft Road, Leicester.

WORDSWORTH ROAD M.C.
Leader—Mr. Newman, Wordsworth Road School, Stoke Newington, London, N.16.
Secretary—Master E. Marsh, Wordsworth Road School, Stoke Newington, London, N.16.

Local Meccano Competitions.

During the last few months, many Meccano Dealers have held local competitions, with very gratifying results. Valuable prizes have been offered for the best models, and boys have responded remarkably well, the models submitted for competition reaching a very high standard.

MR. J. J. BROUGHTON, WIGAN.

Mr. Broughton has held a very successful competition, over 60 boys sending in entries. The competition was run on the same lines at the Big Meccano £250 Prize Competition, and the Prize List, which totalled over £10, included a Suit Case, a Meccano Outfit and Motor, a Steam Engine, a Tennis Racquet, a Football and many other useful awards.

Pressure on space will not permit us to publish the full list of winners, but we have pleasure in giving the names of the first in each section.

Class 1. over 14 years. Edmund Grundy—Working Model Colliery.
Class 2. 10 to 14 years. C. Wolstenholme—Motor Tip Wagon.
Class 3. under 10 „ G. Heaton—Wool Winder.

MESSRS. SHEARD, BINNINGTON & Co., DONCASTER.

Another very successful Competition has been held for Doncaster boys under the direction of Mr. Binnington, and here again great interest and enthusiasm were aroused. Over £5 was offered in prizes and some thirty models were sent in for adjudication. The principal prize winners were :—

First prize - Ernest J. Tricklebank.
Second „ - Ronald Thirlwall.
Third „ - Lester G. Morehouse.

In both this and the Wigan Competition, a representative of Messrs. Meccano Ltd. judged the models so that absolute fairness was ensured. The winning models were afterwards exhibited in the shop windows of the dealers conberned, where they attracted much attention.

MESSRS. POLLOCK & Co., GLASGOW.

In this Competition, which closes on February 28th, Glasgow boys who purchase an outfit from Messrs. Pollock & Co. are given the opportunity of winning a Vest Pocket Kodak, an Ensign Camera, and many other valuable prizes. The total value of Prizes offered is £20, and models will be judged by a prominent Glasgow Engineer.

The results of other local Meccano Competitions will be announced in future issues.

A Simple Explanation of Pulleys.

We saw in our last article under this heading that by using two pulleys, the effort required to lift a heavy body was only half the effort that would have been required to lift it direct.

Proceeding a little further with our investigations, we find that there are three systems of pulleys. The case we have just considered belongs to the first system, and in order to further reduce the power required to lift a heavy weight, we must introduce further pulleys, as shown in the accompanying sketch. Fig. 1.

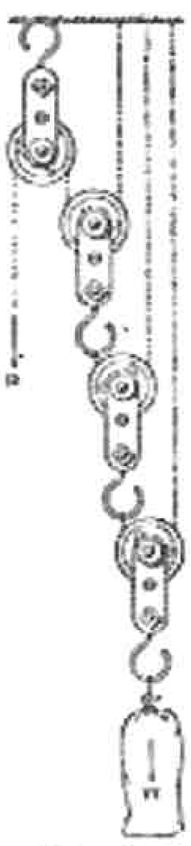


Fig. 1.

Apart from the case we have dealt with, however, this system is not extensively used, as it cannot be easily handled.

The second system of pulleys is far more widely used than the other two, on account of its compactness, and the facility with which it can be used, and a splendid example occurs in the Meccano Derrick Crane, part of which is shown in Fig. 2.

The tackle consists of a rope and two blocks, the upper one containing two pulleys, and the lower one, three. The block which is fixed, is called the "Standing" block, and the one that moves the load, the "Movable" block. The wheels in each block are called "Sheaves," and the rope passing over these pulleys is known as the "Fall." The end of the fall fastened to one of the blocks is the "Standing" end, whilst the end at which the power is applied is called the "Running" end. These names are very important, and any boy with a fondness for tackles or machines, should learn them off by heart, for they will prove very useful in practical work later on.

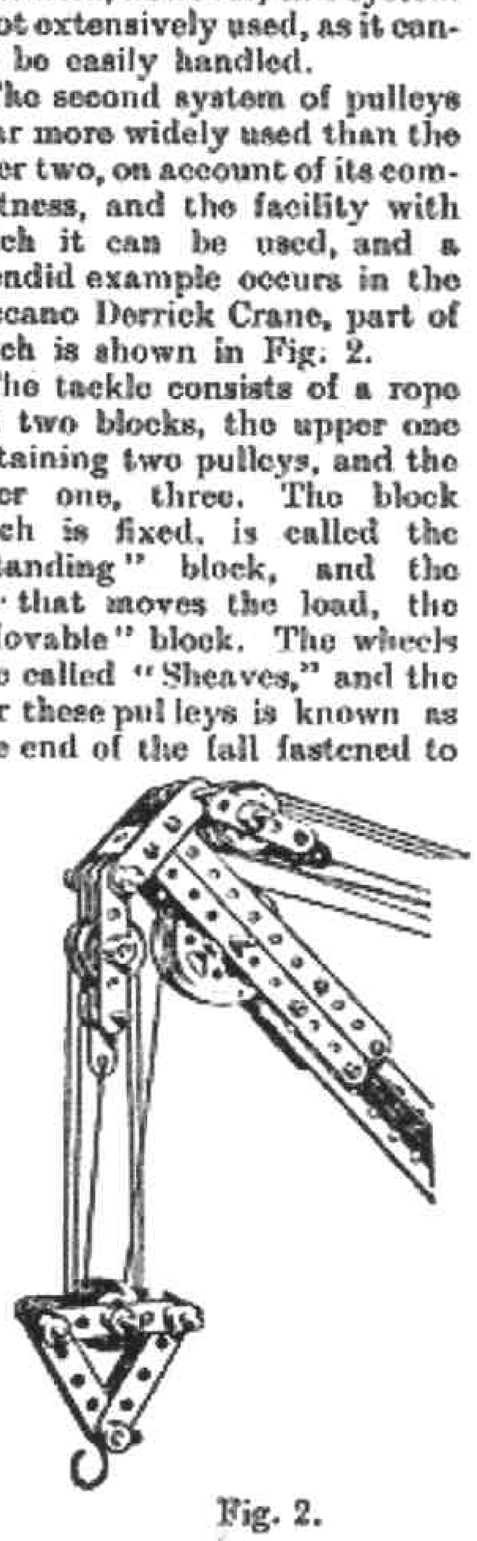


Fig. 2.

We shall now consider the advantages to be derived from using this tackle, and in order to demonstrate more clearly the pulleys are shown separately in the illustration; they act just the same, however, in this way as when shown side by side. The tension on the rope will be the same right throughout the fall, and it will be seen that as there are six cords running from the lower block, and this bears the full weight of the load, six times the tension will be equal to this weight. Thus, if the weight is 60lbs. the tension will only be 10lbs.

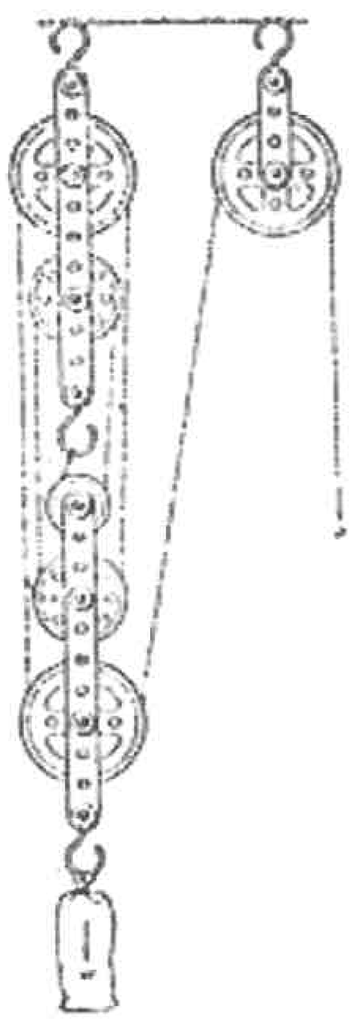


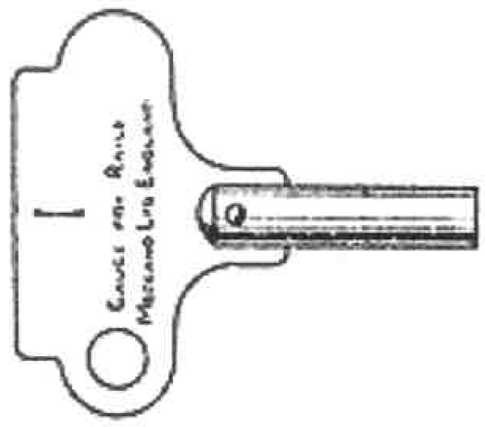
Fig. 3.

As one of these cords is the running end, we see that the weight must be 6 times the power required to lift it. The mechanical advantage is 6, but the load will now only rise very slowly indeed.

Inventor's Accessory Outfit "B."

Contains a splendid assortment of the latest Meccano accessory parts. Bevel gears, 1in. gear wheels, flat plates (four sizes), double angle strips (four sizes), octagonal and strip couplings, threaded cranks, triangular plates, screwed rods, curved strips, architraves, face plates, rack strips, girder frames, hinges, buffers, and train couplings. Price 25s.

Winding Key.



Above is an illustration of the new winding key which accompanies each Hornby Clockwork Train. It will be noticed that it is of special design, the top forming a gauge for the lines. When restoring lines which have been accidently bent, the correct distance between the rails can be found by using this gauge.

Price . . 6d. each.

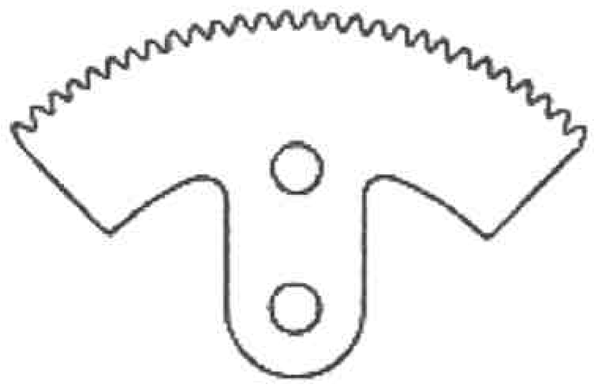
¼ and ½ Rails.

Price for straight or curved rail:

½ rail..... each 5d.

¼ „ ..... „ 4d.

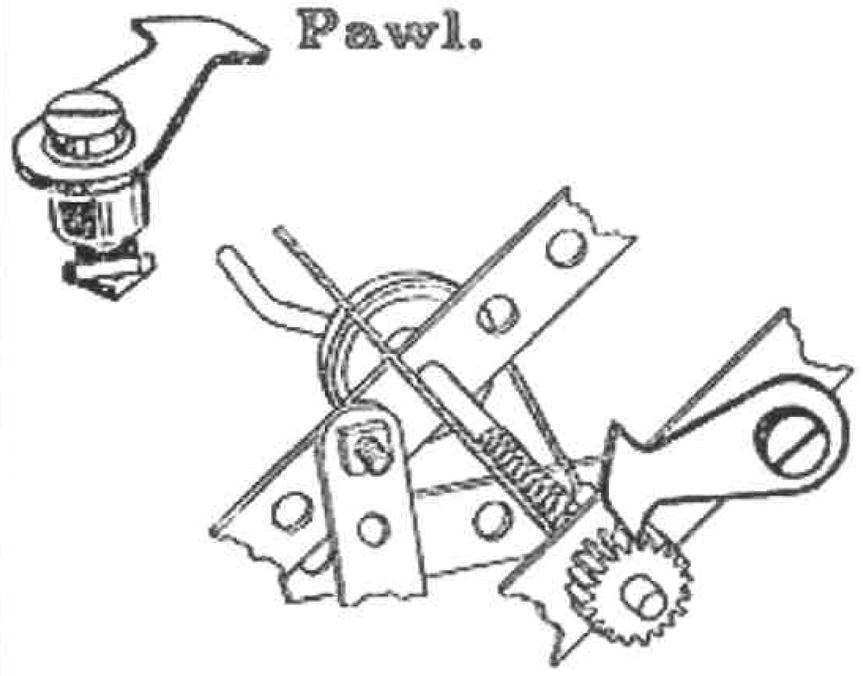
A New Curved Rack.



This is a new and extremely useful part. It can be used to build up a large gear wheel by bolting four of the parts on to a face plate, two bolts securing each part. A large built-up gear wheel of this kind could be used for driving a Big Wheel, or by bolting two of the curved racks, or only one to a face plate, a partial geared wheel is obtained which could be used in connection with a one inch pinion to produce a to-and-fro rotary movement if pinion is reversed. The curved rack may also be used in several other types of model, for instance in a letter-balance, the weight of the letter partly rotating the rack, which engages a pinion, the rotation of the pinion causing an indicator pointer to show the weight of the letter on a graduated scale. This part may only be used to gear with a one inch pinion. It may, however, be arranged to be used to gear with a half inch pinion or worm by an adjustment outside the Meccano Standard.

Price .. 6d. each.

The New Meccano Pawl.



The above is an illustration of the new Meccano Pawl, and an example of its use. This replaces the present pawl, No. 33. It is shown connected to the side strip of a Crane to hold the load while suspended in the air. This pawl moves freely on a pivot bolt secured by lock nutting to the side strip.

The pivot bolt will be sold as a separate part as it may be used for other forms of pivots such as a pivot for the boss of a crank, intermediate gear wheel or loose pulley.

Pawl, complete - each 5d.

Pivot Bolt with two nuts 2d.

A New Grand Meccano Prize Competition

£250 in prizes

A new big Meccano Model Building Contest has started, and we want every Meccano boy to know all about it. There will be hundreds of prizes awarded, including nine prizes in cash to the value of £100, and Meccano Outfits to the value of not less than £150. This time the Competition will be divided into three sections.

1. For boys under 10 years of age.
2. For boys between 10 and 14 years of age.
3. For boys over 14 years of age.

In addition to these prizes the Meccano Guild is offering three awards of £5 each in cash to the member of the Guild who gains the best prize in his Section. Forms of entry may be obtained either from your dealer or from us.

There are no restrictions or entrance fees. Any Meccano boy can enter, and the competitor sending in a simple model made with a No. 0 stands just as good a chance of winning a prize as one sending in a complicated model made from a No. 6 Outfit. This Competition will close on April 15th, 1921.

OUR MAIL BAG

The Editor has a little talk in this column with his Meccano boys. Whether he has space to reply to them all here or not, he is always glad to hear from them. He receives hundreds of letters each day and only those which deal with matters which are likely to interest other Meccano boys can be dealt with here.

Correspondents will help the Editor if they will write on one side of the paper only.

Eric G. Randall, Christchurch.—Your suggestion that there should be a Meccano Cyclists' Union is not a bad one, and we will keep it in mind.

F. C. Osorio (Maida Vale).—"A boy at school was starting a rival Meccano Club to mine, but he has now joined me and the only thing we are rivals in now is to see who can get most new members." This is the right Guild spirit, and we are glad that your combined efforts are producing such good results.

A. C. Wilson (Glasgow).—

There was a young lad who lived on a hill,
And one year at this time he took very ill.
Up came the doctor saying, "What can I do?
Oh, a good rest in bed and Meccano for you."

This is a regular doctor's prescription nowadays Alec, and it always effects a cure.

H. Simpson (Wavertree).—For a Meccano boy of three years' standing you have certainly been negligent in not writing to us before now. We read your letter with much interest and pleasure, and we are glad to hear of your excellent progress at school. Your prediction that the Meccano Guild is bound to be a great success can only be completely fulfilled when every Meccano boy, including yourself, has joined it. If you have time to fill in the Guild Application Form and send it in you have all the time necessary to join as an individual member.

L. Hunt (Newark).—Your little article "The Meccano Maniac," is interesting and shows imagination. It is hardly suitable for publication in our pages, but you will certainly do creditable work if you presevere.

C. Gozzett (Rockford).—Thanks for your suggestion that we start a Meccano Savings Club. We are afraid this is hardly practicable at present.

V. Watt (Axbridge).—We are glad to consider contributions to the *Meccano Magazine* by Meccano boys at any time, and to pay for and use them, if suitable. We are glad to know that the hobby gives such pleasure to all your family.

J. Drinkwater (Sale).—"I am striving with might and main to induce my father to become leader of our Meccano Club." This course has been taken by many other Guild members with success, and we hope your earnestness and persuasive powers will prevail.

Alan Matthews (Gateshead-on-Tyne).—We were very interested in reading the history of the Meccano side of your life. You should join the Guild as an individual member first and later on no doubt a Meccano Club will be formed in your district.

Guy Manning (Bream).—"My Meccano Certificate is hung up in our schoolroom, so that all the boys can see it. We have Meccano handwork for an hour every Thursday afternoon." It pleases us to know that your school chums take such an interest in Meccano and that your teacher gives you so much encouragement. Why not form a Meccano Club with your teacher as leader?

Harry Onion (Bradford).—"Both myself and my boy agree that Meccano is the best thing we have ever struck, and we shall soon build our outfit into a No. 6." We are always glad to have letters from parents who are thoughtful and wise enough to interest themselves in their boys' hobbies. You can get the *Meccano Magazine* either from your dealer or direct from us.

J. Bridgeman (Dublin) furnishes the sequel to the verse of poetry which he contributed to our last issue.

When his chums saw the things he could do,
Said they must have Meccano too,
And very soon every lad
Was escorting his dad
To the shops with Meccano on view.

V. G. Willcox (West Hartlepool).—There is no objection whatever to yourself or any other Guild member putting the letters M.M.G. after your name when writing to us.

Headmaster (Yorks.)—"I have 200 boys in my school and at Xmas Term Exams. the English essay related to what the boys wanted most of all for Christmas. I was astounded to note in marking the papers quite 75% of my boys wanted Meccano, and the good things they told me of the wonders of the Toy were certainly the finest testimonials I have ever read." The popularity of Meccano amongst British schoolboys is one of the most remarkable features of boy life in this country at the present time. You will see that in another part of this issue we are endeavouring to obtain definite statistics on this interesting subject.

H. L. Hurst.—With your brother as Leader, Secretary, Treasurer, President, etc., and yourself as Engineer, Labourer, etc., we feel sure you have fine times in your Meccano Club for two. But why not invite other Meccano enthusiasts to share the fun? We will send you the names of a few if you like.

Eric Smith, Toronto.—We are delighted to learn that you have done such good work building models for Mr. Clarke's window display. He has done a wise thing in letting people see exactly what a clever Meccano boy can do. By undertaking to keep up the traditions of the Guild in Canada, you show the right spirit, and we hope more and more Canadian boys will join you.

A. V. Hooley, Southampton.—Thanks for the cutting from the *Southern Daily Echo*—"A little Freemantle boy dropped the following modest appeal to Father Christmas, 'Dear Father Christmas, Oh! I should like a Meccano if you have one to spare. I don't mind if it is one you had from last year, as I want one so much. With best love.' And he put a 1½d. stamp on his letter too, so Father Christmas only had a penny to pay."

Kenneth Roberts, Stretford.

A CHRISTMAS GREETING.

"A present from mother, and a Happy New Year;
Awake little brother, Meccano is here!
Let's open it quick and see the bright parts,
That are polished so spick to please many hearts.
Who when he finds Meccano at the foot of his bed,

Will sing in soprano and stand on his head.

It looks a difficult feat Kenneth, but nothing is impossible to a Meccano boy.

Charles Whittaker, Ulverston.—Your opinion that the Correspondence Club is one of the best things thought of, is shared by thousands of Meccano boys.

"When short of cash
We feel rather rash,
And would like to raid
The place where Meccano is made."

We shall have to look to our locks, bolts and bars, Charles, or there will be nothing left for those who are not short of cash.

[*A large number of replies have been unavoidably held over*.—ED.]

Meccano Manuals of Instructions

There are two Meccano Manuals of Instructions, and no Meccano boy is properly equipped unless he has them both. Book No. 1 is the regular manual which goes with the main Meccano outfits. It contains illustrations and full instructions for making 323 fine models; some of the models have been designed by our own staff of experts, and others are prize-winning models contributed by Meccano boys, from every country in the world. Price 2s. 6d. (postage 3d. extra)

Meccano Manual, Book No. 2, has only recently been published, and it contains illustrations and instructions for building 100 entirely new models, very many of them prize winners. It contains Tanks, Guns, Submarines, Searchlights, and other warlike models; also a new series of simple and intensely-interesting scientific experiments which any boy can make and which impart a lot of useful knowledge. Price 1s. 3d (postage 2½d. extra).

Prices of Meccano

No.			
0	Outfit with full instructions for building		6/-
1	do.	do.	10/-
2	do.	do.	20/-
3	do.	do.	30/-
4	do.	do.	50/-
5	do.	do. (Carton)	70/-
*5	do.	do. (Wood)	100/-
*6	do.	do. (,,)	180/-

*In well-finished cabinet with lock and key.

Accessory Outfits

No.						
0a	converting a No.	0	into a No.	1	..	5/-
1a	do.	do.	1	do.	2	.. 11/-
2a	do.	do.	2	do.	3	.. 12/-
3a	do.	do.	3	do.	4	.. 22/-
4a	do.	do.	4	do.	5	.. 17/6
5a	do.	do.	5	do.	6 Car.	65/-
5a	do.	do.	5	do.	6 Wood	95/-
Inventor's Outfit "A"					.. ..	10/-
Inventor's Outfit "B"					.. ..	25/-
Meccano Clockwork Motor					.. ..	12/6

Each Meccano outfit is complete with all parts and tools necessary for building models. Full instructions are included, and the youngest boy can commence to build at once without study. An accessory outfit may be purchased at any time, enabling bigger and more interesting models to be built. Additional parts may also be purchased separately, at prices given in our published lists.

Remember that though boys play with Meccano for pleasure, and though they get more genuine fun from it than from any other toy, it also gives them a sound knowledge of engineering. Through playing with Meccano, many a bright boy has been started on a prosperous career in one of the most important and profitable professions—engineering and mechanics.

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